

REMARKS:

Claims 1-4, 6-16, 18-28, 30-34, 37-39, 41-43 and 45 are pending, of which claims 1, 13, 25, 30, 31, 37, 41 and 45 are independent claims. Claims 5, 17, 29, 35-36, 40, 44 and 46-64 have been cancelled.

Claim Rejections under 35 USC §101

Claims 1-45 were rejected under 35 U.S.C. 101 as being directed to non-statutory subject matter. The Examiner indicated in the Office Action that claims 1-45 recited the mere manipulation of data or an abstract idea, or merely solved a mathematical problem without a limitation to a practical application.

Independent claims 1, 13, 25, 30, 31, 37, 41 and 45 have been amended to recite that the claimed decoding is applied to the compressed video information (“a block of coefficients relating to a block of video information to be displayed which has been transformed and quantized for compression of the video information”) and that the result is the decoded video information for display (“inversely transform the block of scaled coefficients in order to reconstruct a signal of the block of video information for display of the video signal”). Thus, the claimed invention has the practical application and yields useful, concrete and tangible result, i.e., display of decoded video signal.

The Examiner further objected to claim 13 and 37 as reciting functional descriptive material without being embodied on a computer readable medium. Both claims 13 and 37 are directed to “a decoder,” not to a computer readable medium. Applicant believes that the above amendments to these claims have clarified the structures forming the decoder.

Claim Rejections under 35 USC §102

Claims 1-9, 12-21 and 24 were rejected under 35 U.S.C. 102(a) as being anticipated by Wiegand. The Examiner indicated in the Office Action that it was clear that a reasonable interpretation of a LUT used independently of the block size indeed required allowing the index to be dependent on the size of the block of coefficients. To understand the difference between the claimed invention and Wiegand, it is important to recognize the difference between how an index is made and how the index is used. How an index is made and how the index is used are different operations.

Wiegand shows the following table at 14.3.2.2:

Table 14-1 – ABT dequantization mantissa values

k	S _{8x8}	S _{8x4,4x8}	S _{4x4}
0	15	9	11 40 64 51
1	17	10	12 45 72 57
2	19	11	14 50 81 64
3	22	12	16 57 91 72
4	24	14	17 63 102 80
5	27	15	20 71 114 90

Table 14-1 shows three discrete and independent vectors which are mode dependant and chosen according to the mode. *Id.* The identified modes are 8x8, 8x4, 4x8 and 4x4 (Table 14-1). Wiegand then shows four different operations of indexing one of the three vectors in Table 14-1.

Mode 8x8:

$R[k][i][j] = S_{8x8}[k]$ for all i, j

Mode 8x4:

$R[k][i][j] = S_{8x4,4x8}[k][0]$ for all even j

$R[k][i][j] = S_{8x4,4x8}[k][1]$ for all odd j

Mode 4x8:

$R[k][i][j] = S_{8x4,4x8}[k][0]$ for all even i

$R[k][i][j] = S_{8x4,4x8}[k][1]$ for all odd i

Mode 4x4:

$R[k][i][j] = S_{4,4}[k][0]$ for $(i, j) = \{(0,0), (0,2), (2,0), (2,2)\}$,

$R[k][i][j] = S_{4,4}[k][1]$ for $(i, j) = \{(1,1), (1,3), (3,1), (3,3)\}$,

$R[k][i][j] = S_{4,4}[k][2]$ otherwise;

Please note that a set of $[k][i][j]$ is an index common to all of the four indexing operations, where k is a function of the quantum parameter (QP%6), and (i, j) are the positions of coefficients. Therefore, in Wiegand, the index is made based on the quantum parameter and the positions of coefficients. Now that the index is ready, the next operation is indexing one of the three vectors, using the index.

In Wiegand, the indexing operation for 8x8, for instance, is defined by:

$S_{8x8}[k]$ for all i, j .

S8x8 is one of the matrixes defined in Table 14-1. Therefore, the above equation suggests that performing “indexing,” or an indexing operation, requires identification of the mode, i.e., the size of the block to be scaled. If the size is 8x8, one chooses the matrix labeled $S_{8 \times 8}$ from the Table 14-1 and then indexes matrix $S_{8 \times 8}$, using the index $[k][i][j]$, to determine the scaling factors in matrix $S_{8 \times 8}$ for scaling. Thus, in Wiegand, the indexing operation is mode dependent, but the index itself is independent of the mode. Likewise, for the other modes, 8x4, 4x8 and 4x4, while the indexing operation is mode dependent, the index itself is mode independent.

First, Wiegand is silent about the limitation of claim 1 as amended above to “providing a single look-up table (LUT) which consists of a single group of scaling factors applicable for scaling of coefficients of different block sizes.” As explained above, Wiegand uses three different and discrete matrixes $S_{4 \times 4}$, $S_{8 \times 4, 4 \times 8}$ and $S_{8 \times 8}$ for scaling.

Second, Wiegand is silent about the limitation of claim 1 to “computing an index for each coefficient, the index is a function of a quantization parameter, a size of the block of coefficients, and a position of said each coefficient within the block.” As explained above, Wiegand’ index $[k][i][j]$ is a function of the quantization parameter and the positions of the coefficients and does not depend on the block size.

Third, Wiegand is silent about the limitation of claim 1 to “indexing the LUT, using the computed index, to determine a scaling factor in the LUT applicable for scaling of said each coefficient, wherein indexing is independent of a size of the block.” As explained above, the Wiegand indexing operation is mode dependent, not independent of the block size.

Since Wiegand fails to disclose or teach the above claim limitations of claim 1, claim 1 and its dependent claims should be allowable over Wiegand. Claim 3 as amended above recites limitations similar to the limitations of claim 1. Therefore, claim 3 and its dependent claims should also be patentable over Wiegand.

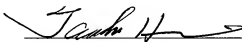
Claim Rejections under 35 USC §103

Claims 25-30 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wiegand in view of Boon et al. Claims 10, 11, 22, 23 and 31-40 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wiegand in view of Ohki. Claims 41-45 were rejected under 35 U.S.C. 103(a) as being unpatentable over Wiegand in view of Boon et al. and further in view of Ohki.

Independent claims 25, 30, 31, 37, 41 and 45 as amended above recite limitations similar to the limitations of claim 1 as discussed above, which Wiegand fails to teach. Besides, neither Boon et al. nor Ohki discloses or teaches those limitations. Therefore, claims 25, 30, 31, 37, 41 and 45 and their dependent claims should be patentable over the cited references.

In sum, none of the pending claims is anticipated or would have been obvious in view of Wiegand, Boon et al. and Ohki, either independently or in combination. Applicant respectfully submits that the pending claims should be patentable over the cited references.

Respectfully submitted,

A handwritten signature in black ink, appearing to read 'Tadashi Horie', written over a horizontal line.

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